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Summer, 1989
Volume Seven - Number One

MONTANA SOICC NEWSLETTER

Montana State Occupational Information Coordinating Committee

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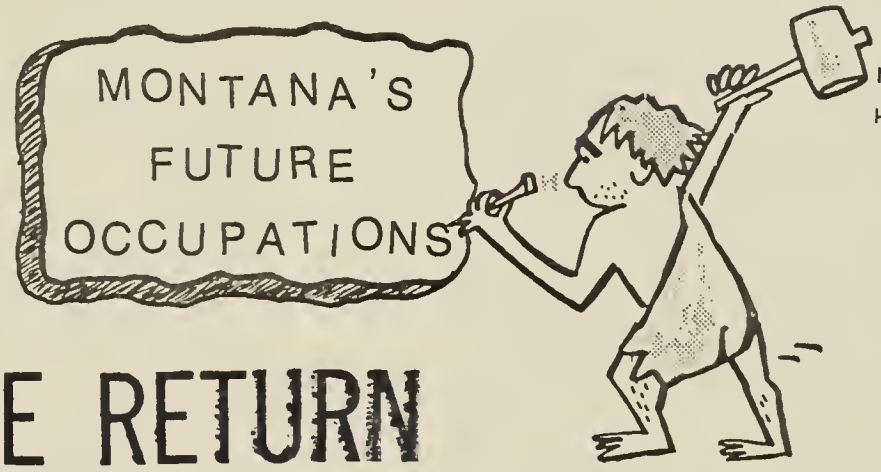


PLEASE RETURN

What may become the occupation of the future is so new that there's not yet a name for it.

But people who have creative logical minds and who have a knack for understanding the needs of computer illiterates--and who want to solve their problems--may find a new field opening up.

Troubleshooters for the computer age. Microcomputer systems analysts. The people at the Missoula Vocational Technical Center are trying out all kinds of titles, but even without a job title, they're planning to teach the skills that businesses and professionals tell them will soon be in demand all over the area.

"They will program and deal with software applications and customize it for business," said Lynn Stocking, chairman of the business division and coordinator of computer services for the Vo-Tech. "We're trying to offer a variety of experiences with software as well as hardware.

"It's neat to provide not only the bread-and-butter, meat-and-potatoes programs, but to get in on the ground floor of an emerging occupation," added Claudia Moore, supervisor of academic affairs.

The school spent $230,000 on new equipment for the course and it's the only public school in Montana to offer anything like it. The program won't be a computer repair course, nor will students be trained as electronic experts. But they will learn how to tailor basic computer programs to business needs, how to investigate problems and how to train other people.

"Sometimes manuals and documents just don't do the job," said Stocking.

The first class to enroll in the two-year microcomputer systems and applications program will start in the fall. There is a one-year version of the program that doesn't deal with applications.

Rhea Bottomly, Vo-Tech counselor, said she expects the class to draw "curious, computer-oriented people who like to problem-solve and work more independently."

The two-year, full-time course will cost about $2,100. Registration is August 16 and the first class starts August 23.

Wages for computer programmers and analysts in Montana average between $10 and $13 per hour. Wages for this occupation should be similar.

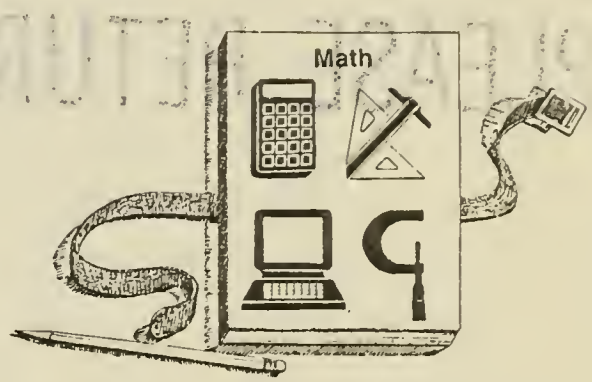
The Vo-Tech is also sponsoring a new program in legal assistance, at the request of the business community. That two-year program, which will be limited to 25 students at a time, will result in workers who become "the right arm of an attorney," Bottomly said. Entry-level wages in the area are $9 to $9.50 per hour.

The legal assistance program will cost about $2,200. Registration starts August 16 and classes begin August 23.

For more information, call the Missoula Vocational Technical Center at 542-6884.

SOURCE: The Missoulian, May 3, 1989

Math and Your Career



Solving a math problem requires thought, concentration and practice. Sometimes, math requires extra effort. Is the effort worth it? **YES!**

One reason we all need math skills is to cope in today's complex world. We need to use math every day--in balancing a checkbook, shopping for groceries, cooking, making up a personal budget, or working on a car, for example. This type of math is often referred to as consumer math.

Math is important in a great many occupations, too. Auto mechanics, for example, must solve problems with gear ratios and often must convert measurements into the metric scale. Surveyors measure length and angles and use the Pythagorean theorem. Tax accountants, farmers and real estate brokers are a few of the many professionals who must know how to calculate various types of interest rates. Top salaries are often paid in jobs held by workers with strong backgrounds in higher level math. Engineer, actuary, architect, systems analyst, underwriter and financial manager are examples of math-related jobs that pay well.

Even if math were never used in personal life or on the job, it would still be a useful subject to study. In studying math, we develop skills in problem solving: we learn how to think through a problem logically, break it down, and solve it step by step. We also learn how to pose questions, analyze situations, translate results and make estimates. That's why the study of math is an important part of a well-rounded education.

Recognizing the place of mathematics in education, most high schools require at least a year or two of it for graduation. Entry to most colleges requires some proficiency in math, regardless of major. Standardized, nationwide achievement tests used to screen college applicants contain many mathematical problems. In short, wise students learn math whether they see a use for it or not.

Mathematics is more than just a collection of rules and formulas to memorize. Rather, it is a tool that can be used in school and out, at leisure and at work. It is a subject that is becoming increasingly important, a subject worth putting some extra effort into.

	Montana Average Hourly Wages
Advanced levels of theoretical math are required for:	
• petroleum geologist	$29.00
• computer applications engineer	$18.95
• civil engineer	$15.39
• architect	$14.71
• laboratory tester (chemical)	$10.43
Applied mathematics is important for:	
• financial analyst	$18.62
• accountant	$11.18
• computer programmer, information systems	$11.07
• land surveyor	$9.59
• electronic drafter	$9.36
Practical "shop" mathematics is necessary for:	
• electronics technician	$11.91
• combination welder	$11.32
• automobile mechanic	$10.49
• machinist	$10.15
• carpenter	$9.51
Arithmetic is important for:	
• statistical clerk	$9.91
• payroll clerk	$7.44
• insurance claims clerk	$7.23
• bookkeeper	$6.62
• shipping and receiving clerk	$6.19

SOURCE: Occupational Outlook Quarterly, Summer, 1987; Montana Supply/Demand Report, 1988

Yes, There's Life After Liberal Arts

At least, that's the gist of a report from the career planning office at the University of Virginia. Its information came from a 1984 survey of 2,000 men and women who graduated between 1971 and 1981 from the College of Arts and Sciences. The study was directed by Richard S. Benner and Susan Tyler Hitchcock.

Overall, alumni responses were very positive toward liberal arts as preparation for a career. Ninety-one percent would recommend that undergraduates major in liberal arts and 85 percent said they were satisfied with their current positions, 51 percent were satisfied with their first job. When they graduated, only 36 percent said they had a "clear" or "very clear" sense of career direction.

Here are some of the quotes from individual alumni or from the report:

> "Don't assume that when you choose a major, you are choosing a career as well. There is virtually no connection between academic majors in the liberal arts and future career paths."
>
> "Take at least one general business course, one introductory accounting course, and one computer course, regardless of your major or career objective."
>
> "Summer experiences are key! I wish I had known this earlier. Getting an internship allows you to see if you like the field. Also, if you do a good job, you're almost assured of a permanent job later."
>
> "Undergraduates should write to and speak with those who are working in the fields to which they aspire. Information interviews are invaluable."
>
> "The people I work for told me they had no intention of hiring anybody when I first walked through the door, but that after talking with me and reading my writing, they felt they would be making a mistake not to hire me."
>
> "Be active in extracurricular activities. They provide real-life models. They also help eliminate the Catch 22s of 'no experience = no job'."
>
> "Get a job where you can develop a project--almost any project. Do it and every aspect of any task as well as you can."

Particularly interesting was the relatively large number of jobs held since graduation, as illustrated in the report. A 1971 speech major, who began with IBM, is now in the third job as president of a computer systems company. A 1971 history major, who began working for a member of Congress, is now in his sixth job as a bank vice-president. A 1972 history major is now an editor-writer for an oil company--the twelfth job since graduation.

The report **Life After Liberal Arts: Information and Advice from the University of Virginia's College of Arts and Sciences Alumni Career Survey** is distributed by the Office of Career Planning and Placement, Garrett Hall-Lower Level, Charlottesville, Virginia 22903.

SOURCE: **Career Opportunities News**

Non-Traditional Occupations

What is a non-traditional occupation?

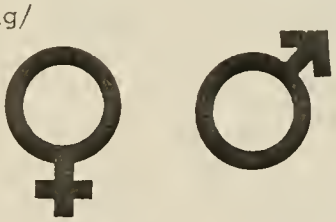
An occupation that is "non-traditional" for women or men refers to an occupation in which less than 25 percent of the workers are members of the sex in question. Since women have historically been much more restricted than men in terms of the types of jobs they could hold, the greatest number of non-traditional jobs in America today are non-traditional for women.

Non-Traditional Jobs for Females

Agricultural Production, Supplies,
Forestry, Renewable Natural Resources
Automotive/Diesel Mechanics
Hotel and Lodging Occupations
Emergency Medical Technician
Accounting/Computer Occupations
Architectural/Civil Technology
Electrical/Electronic Technology
Environmental Control Technology
Industrial Technology
Aviation Occupations
Mechanical Technology/Drafting
Body and Fender Repair
Carpentry/Woodworking Occupations
Custodial Services
Industrial First Aid
Maritime Occupations
Machine Shop, Sheet Metal/Welding/
  Cutting Occupations
Firefighting
Law Enforcement
Small Engine Repair
Stationary Energy Sources

Non-Traditional Jobs for Males

Apparel and Accessories
Food Distribution
Home Furnishings
Dental Assisting
Dental Hygiene
Medical Laboratory Technician
Nursing
Practical Nursing
Nursing Assistant
Rehabilitation Occupations
Optometric Technician
Medical Assistant
Care and Guidance of Children
Institutional/Home Management/Support
Stenographer/Secretarial Occupations
Typing and Related Occupations
Cosmetology



SOURCE: **Adults in Career Transition Newsletter**, Maine Occupational Information Coordinating Committee

Declining Enrollments

Enrollments in registered nursing programs declined in 1988, but at the slowest rate in five years, according to preliminary results from the National League for Nursing's 1988 survey of state-approved nursing schools.

Enrollments were down 0.7 percent in 1988, compared with the 5.6 percent decrease in 1987 and the 1986 decrease of 11.1 percent.

While baccalaureate enrollments declined 5 percent and diploma enrollments dropped 1.5 percent in 1988, associate degree enrollments rose 3.1 percent.

SOURCE: **AVA Update**

it's A New World

A career video for middle school students

Do your students ever ask: Why do I have to study science? Why do I have to take math?

"it's A New World" is a career video for middle/junior high school students that can play a part in improving students' attitudes toward science and math courses. The video offers occupational information and highlights the importance of a good educational background in math and science and its relevance to careers.

"it's A New World" provides information through interviews with professionals in these high demand occupations: computer programmer, nurse, accountant, technical sales representative, industrial engineer and electronic engineering technician.

Our nation's future hinges on having an ample supply of people who achieve in mathematics and science, are science-literate and can perform technical jobs with world-class competence.

Until now, the roles of minorities, women and people with disabilities in science and engineering have been widely seen only as an equity issue, rather than as the key to our future national strength in science and technology. Teachers, principals and counselors should create a school and classroom climate of high expectations in mathematics and science for all students, particularly minorities, women and students with disabilities.

Middle/junior high school students are at their first formal choice-points and it is a crucial time to work on student motivation and aspirations. "it's A New World" motivates students to keep their career options open by taking math and science courses in middle school, high school and beyond.

To have a significant influence on student behavior in choice-making, education experiences need to be timely and immediate to the questions students are asking themselves, such as, "Why should I take science or math?" "it's A New World" shows the immediate relevance of academic content to salable skills.

Middle/junior high school years are a time when sex differences exert important influences in curriculum choices. Traditional sex-role expectations are evident before the eighth grade. Counselors and teachers must actively bolster women's and minorities' career and math related self-competence expectations if more informed and non-stereotyped career choices are to be made. "it's A New World" emphasizes sex and race equity by showing women and minorities and people with disabilities in nontraditional work roles.

"it's A New World" is a 37 minute VHS videotape and comes with a curriculum guide. The cost for the videotape and curriculum guide is $89.

If you are interested in ordering "it's A New World", please write to the Montana SOICC, P.O. Box 1728, Helena, Montana 59624.

Growing & Declining Industries & Occupations

Deciding on an occupation is an important decision facing young Montanans looking for their first jobs--as well as for workers making career changes. It's best to start out with the most current information available about industry and occupation trends.

To help meet this need, the Montana Department of Labor and Industry has created a publication called "Montana's Growing and Declining Industries and Occupations, 1986-1995."

Access to the latest in job trend information can be of invaluable help to everyone involved in Montana's employment picture, whether they be job seekers, educators, employment counselors or job training planners. The information in this publication, however, should be used only as a starting point when making decisions about career planning and training.

If you are interested in receiving a copy of this publication, write to the Research and Analysis Bureau, Department of Labor and Industry, P.O. Box 1728, Helena, Montana 59624.

Needed: Human Capital

Who will do America's work as the demand for skilled labor outstrips a dwindling supply? The U.S. has lost much ground to competitors, and investing in people looks like the way to retake it. After years of neglect, the problem of human capital has become a crisis. The $150 billion yearly trade deficit and a foreign debt of half a trillion dollars reflect the inability of a large percentage of the American work force to compete effectively in an integrated world economy.

America, in short, has been scrimping on human capital. Building up human capital is becoming a national priority. The evidence is overwhelming that people, not machines, are the driving force behind economic growth.

At a time when jobs require higher levels of math, science and literacy than ever before, the economy is becoming increasingly dependent on the groups that often receive the poorest education. Between now and the year 2000, more than half of all new workers hired will be minorities, nearly three times the current figure.

The U.S. may now be entering an era when neglect of the bottom half of society begins to threaten the welfare of the entire nation.

SOURCE: **Business Week**, September 19, 1988; **NATTS News**, November 1988

Kate Kahle, Editor
Montana SOICC Newsletter
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Robert N. Arnold
Program Officer
Montana SOICC

If you would like to contribute to this newsletter, contact the Montana SOICC at P.O. Box 1728, Helena, Montana 59624. The Montana SOICC reserves the right to edit all information submitted.

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